

How the Role of Information Technology in the Quality of Accounting Information Systems: Empirical Test on Accredited Private Universities in Java

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Abstract. Various government and private units have not yet implemented quality accounting information system. Users need quality information generated by accounting information systems to guide them in making quality decisions. Information technology plays an important role in helping accounting information systems to achieve this goal. This study is intended to examine the role of information technology in producing the quality of accounting information system. The research hypothesis was tested on 108 financial units of A and B accredited Private Universities in Java selected using the stratified random sampling method, and 71 sample units have returned the questionnaire. The research methods used are descriptive and verification methods. The study results show that information technology significantly influences the quality of accounting information system. And it can be used to solve the problem on there is no quality of accounting information system through the use of appropriate information technology.

Keywords: Information technology · Accounting information system quality

1 Introduction

An organization is in an environment that generally changes faster than the changes in the organization itself [1]. To continue to exist in their environment, the organization must be able to adapt to changes in the environment. One such effort is seen in the dependence of organizations with information technology and information systems, both for operational needs and to maintain their strategic advantage [2]. Specifically information technology plays a role in helping information systems produce information for decision making and problem solving more thoroughly in organizations [3][4].

An accounting information system produces useful accounting information, both for internal and external party decision making [5]. Thus, quality information depends on the quality of the information system that produces it [6]. Some of the characteristics, such as: Integration, reliable, and flexible system describes the quality of the accounting information system applied. The quality of system integration is reflected in the integration of various components or sub-systems [7], data integration [3], and integration between related systems [8]. The reliability of the system is seen in the system's ability to minimize errors and produce true and consistent information [8]. The

use of quality accounting information systems helps improve the quality of decision making by providing accurate and timely and relevant information [9][10].

But in reality the accounting information system applied in the units of government and private not meet the quality characteristics such as: the system is not yet integrated [11], the system is not reliable [12], and the system is not flexible [13]. Wahid [11] as Head of the Information System Board (BSI) of the Islamic University of Indonesia stated that the accounting information system at the Islamic University of Indonesia was not yet integrated, because the system services available today were still fragmented, so system users had to move platforms to access. In another part, Bisri [12] as the Chancellor of Brawijaya University stated that there are some university revenues that have not been included as university income, even though the internal campus already has an Internal Control Unit (ICU). The statement shows the problem of the reliability of the accounting information system to produce accurate information.

In addition, Niartiningsih [13], as the Kopertis Region IX Coordinator of Sulawesi, described that the information systems at twelve private universities in South Sulawesi are inflexible, because these private institutions have difficulty adjusting the reporting system changes from the University Database System (UDS) to the Feeder System. Based on some of the phenomena stated above, it can be concluded that there are problems with integration, reliability and flexibility system in accounting information systems in various universities in Indonesia.

Information technology used is one of the factors that influence the quality of accounting information systems [10][14][15]. Information technology (IT) is a term that refers to all technologies that collectively facilitate the development and maintenance of information systems [4]. Information technology influences every aspect of accounting which includes financial reporting, management accounting, auditing and tax [10]. More specifically [14] states that information technology has a major influence on accounting information systems because technology is the foundation for accounting information systems. In addition, information technology has significantly strengthened the role of accounting information systems to support the decision making of every manager and knowledge worker in business [15].

Several previous studies have proven the importance of the role of information technology for the quality of accounting information systems. Al Eqab & Ismail [16] prove a positive and significant relationship between information technology and accounting information systems. In line with the results of research Sacer & Oluic [17] on small and medium-sized companies in Croatia that information technology contributes significantly to the quality of accounting information systems. In addition, Al-Zwyalif [18] also proved that the appropriate management of information technology affects the usefulness of accounting information systems. Furthermore, Susanto's research results [19] at universities in Bandung also concluded that information technology influences the quality of accounting information systems.

The importance of the quality of accounting information systems to produce quality information for decision makers, and the role of technology for information to improve the quality of accounting information systems, this study aims to examine how much influence the information technology has on the quality of accounting information systems.

2 Literature Review

2.1 Information Technology

Pearlson & Saunders [20] states that information technology is all forms of technology used to create, store, exchange, and use information. Williams & Sawyer [21] reinforces the above opinion that information technology describes every technology that has the ability to help produce, manipulate, store, communicate, and or disseminate information. In addition, Thomson & Baril [22] argues that information technology is something that is used as a computing and communication tool that has the ability to capture data (input), process and or convert, store and presents data (output). We define that information technology is all forms of technology that have the ability to help accounting information systems to process, store, transfer and transfer quality information.

According to Innovation Diffusion Theory (IDT), there is a set of theoretical constructs that represent information technology, including: image, visibility, compatibility, result demonstrability, voluntariness of use, which is used for research on acceptable technological innovation [23]. In another part according to Pearlson & Saunders [20] information technology can be seen from the aspect of technical issues, through the characteristics: adaptability, scalability, standardization, maintainability, and security. Other experts, Turban, et al., [24] describe information technology through 4 (four) characteristics, namely: dependable, manageable, adaptable, and affordable. Likewise Thomson & Baril [22] suggested that there were 4 (four) characteristics groups to measure the performance of information technology, namely functionality, ease of use, compatibility, and maintainability. This study uses the characteristics: compatibility, maintainability and functionality to measure the concept of information technology.

2.1.1 Accounting Information System

Simkin, Roce, & Norman [10] state that an accounting information system is a collection of data and processing procedures that produce financial information that is needed by its users. Another opinion was expressed by Mancini, et al., [25] that the accounting information system is a complex system consisting of a collection of components that are closely interrelated (such as data, information, human resources, information technology tools, models and procedures accounting). Furthermore Susanto [26] defines accounting information systems more specifically, as a collection (integration) of sub-systems / components both physical and non-physical that are interconnected and work together in harmony to process financial transaction data into financial information. We argue that an accounting information system is a collection of components or subsystems that interact harmoniously to process financial data and generate financial information for decision makers.

Petter, Delone & Mclean, [27] describe the quality of information systems through characteristics-characteristics: ease of use, system flexibility, system reliability, and ease of learning. The same thing was stated by Delone & McLean [28] that the quality of information systems can be measured through the characteristics: ease-of-use, functionality, reliability, flexibility, data quality, portability, integration, and

importance. Fitrios [29] uses characteristics: flexibility, reliability, and integration to determine the quality of accounting information systems. The quality of the accounting information system in this study is measured by the characteristics: flexibility, reliability and integration.

2.1.2 Framework and Hypothesis

Information technology affects the quality of accounting information systems. Valacich & Schneider [3] suggested that information technology is used by accounting information systems to collect, create and distribute useful data. Gelinas & Dull [14] emphasize that the development of information technology has a major impact on accounting information systems, because technology is the foundation on which accounting information systems lean. More specifically other impacts of the use of information technology are related to the time needed to carry out input-process-output, to produce financial information [10]. With advances in technology, transaction-financial transactions processed immediately, so that the accounting information system can generate financial reports in real time [10].

The results of previous studies from Sacer & Oluic [17] concluded that information technology contributes significantly to the quality of accounting information systems. Furthermore Quintero, Mora, & Abrego [30] stated that information technology supports the application of accounting information systems by increasing company productivity, such as increasing administrative activities, and making decisions based on information generated. Likewise, Susanto [19] conducted research at college institution in Bandung to conclude that information technology has a significant effect on the quality of accounting information systems.

Based on the description of the theories and the results of previous studies above, it can be concluded that the research hypothesis that information technology affects the quality of accounting information systems.



Fig. 1. Research Model.

3 Methodology

The research method used is descriptive research methods and causal research methods. Descriptive method is intended to describe the characteristics of the data regarding the event, person or situation under study [31]. While the causal research method is intended to determine the cause and effect / effect of the relationship between two or more variables [32].

This research was conducted at private universities accredited A and B in Java. Unlike state universities as government tertiary education, private tertiary institutions

are owned and managed by certain individuals or groups / foundations. The funding for the management and implementation of education is the full responsibility of the tertiary institution. The population of accredited private universities A and B is 170. The questionnaire was sent to 119 selected private universities that were selected through the stratified random sampling method. A total of 71 universities returned questionnaires with a total of 220 questionnaires fulfilling the criteria to be processed.

This study uses Structural Equation Modeling (SEM) based on Partial Least Square (PLS) to test the validity and reliability and test the hypothesis. PLS-based SEM is used, because latent variables are formed by dimensions and indicators.

4 Result and Discussion

Table 1. Descriptive Statistics of Information Technology and Accounting Information System Quality Variables.

	N	Minimum	Maximum	Mean	Std. Deviation	Criteria
Compatibility						
IT1	220	2.00	5.00	3.9364	.76184	enough
IT2	220	1.00	5.00	3.3045	1.03057	enough
Maintainability						
IT3	220	1.00	5.00	3.4455	.93717	enough
IT4	220	2.00	5.00	3.6273	.82605	enough
IT5	220	1.00	5.00	3.5545	.88195	enough
Functionality						
IT6	220	1.00	5.00	3.0182	1.43334	enough
IT7	220	1.00	5.00	3.7136	.81917	enough
Flexibility						
AISQ1	220	1.00	5.00	3.4612	.88934	enough
AISQ 2	220	1.00	5.00	3.2146	1.0859	enough
Reliability						
AISQ 3	220	1.00	5.00	3.5455	1.52318	enough
AISQ 4	220	1.00	5.00	3.9591	.85823	enough
AISQ 5	220	1.00	5.00	3.5864	.92555	enough
Integration						
AISQ 6	220	1.00	5.00	3.7318	.87800	enough
AISQ 7	220	1.00	5.00	3.1364	1.28125	enough
AISQ 8	220	1.00	5.00	2.8000	1.23565	Not good
Valid N (listwise)	220					

Table 1 show that the average respondent's answers to questions related to indicators of the information technology variable and the accounting information system quality variable on the "sufficient" criteria, except AISQ 8 questions regarding integration between systems showed the criteria of "not good". Each respondent's answer shows that there is a gap between theory and reality in universities.

Evaluation of structural models is used to see the results of hypothesis testing. The evaluation of the structural model evaluation results through path coefficient and R Square will determine the ability of empirical data to support the theory [33]. The ability of information technology constructs to explain the constructs of the quality of accounting information systems can be seen through the value of R Square. R Square test results show a value of 0.6607 and can be said to be "moderate". This can be interpreted that the information technology construct is able to explain the quality of accounting information systems by 66.07%, while the remaining 33.93% is explained by other variables.

The statistical hypothesis indicates whether or not there is an influence of information technology on the quality of the accounting information system. The structural model evaluation results provide a path coefficient with a positive sign of 0.813 and significant at alpha 5%, which is marked by a statistical t value of 19,217 > 1.96 (see in table 2). The results of this study reject H⁰ and accept H¹. Thus it can be concluded that information technology has a significant positive effect on the quality of accounting information systems. That increasing the use of information technology appropriately increases the quality of accounting information systems at private accredited universities in Java.

This study empirically proved that information technology affects the quality of accounting information systems. This result is shown by the statistical t value which is greater than the critical value and is supported by a high path coefficient value. This result is also strengthened by the R square value of 0.6607 which shows the ability or role of information technology in explaining the quality of accounting information systems.

Table 2. Path Coefficients (Mean, STDEV, T-Values).

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)
AISQ -> AISQFLEX	0.812675	0.817258	0.027016	0.027016	30.081093
AISQ -> AISQINTERG	0.884474	0.883816	0.030005	0.030005	29.477473
AISQ -> AISQRELIAB	0.816081	0.819446	0.041333	0.041333	19.74381
IT -> AISQ	0.812834	0.809177	0.042298	0.042298	19.217018
IT -> ITCOMPAT	0.908885	0.907752	0.023265	0.023265	39.067152
IT -> ITFUNCT	0.857911	0.853234	0.031701	0.031701	27.062296
IT -> ITMAINT	0.963207	0.963631	0.008202	0.008202	117.44136

The significance of the influence and the magnitude of the role of information technology on the quality of accounting information systems is supported by the strong relationship of 3 (three) dimensions of information technology, namely: compatibility, maintainability, and functionality of the construct (see in table 2). This result is shown

by the path coefficient value of the three dimensions is higher. Whereas in other parts the quality of accounting information systems is also supported by the dimensions of flexibility, reliability and integration which have a strong relationship with the construct (see in table 2).

Furthermore, the results of empirical data collected in this study are able to describe or explain the phenomenon of the lack of quality accounting information systems that occur in the field. Empirical data shows that the average value per item question both about information technology and accounting information systems that show a value of "sufficient" and specifically for the question item "integration between systems" shows the results of "not good" than the maximum value of 5. These results illustrate that accounting information systems at private accredited universities are not yet of high quality, and the information technology used has not been able to support the quality of accounting information systems.

The above discussion illustrates that to improve the quality of accounting information systems, it is necessary to increase the ability of the information technology used. The ability of the information technology used can be seen through its dimensions. The path coefficient value shows successive results from the dimensions of "maintainability" followed by "compatibility" and "functionality". The information technology used must have the ability to adapt to other information technologies needed, have the ability to adapt to changes in the capacity of the accounting information system. In addition, the information technology used must be supported by the availability of parts and repair services. From the aspect of compatibility, information technology is needed that is interoperable with other technologies, and they have conformity to product standards. Then from the aspect of functionality, it takes technology that has sufficient speed to send and receive data / information and has sufficient connectivity capability to operate.

The results of this study are able to confirm the statement of Wilkinson, et al., [5] where information technology is able to significantly improve the performance of a company's accounting information system. The results of this study also reinforce the statement put forward by Gelinas & Dull [14] that information technology has a major impact on the quality of accounting information systems, and provides opportunities for organizations to improve the efficiency and effectiveness of accounting information systems [10]. The results of this study further strengthen the results of previous studies: Al-Eqab & Ismail [16], Al-Zwyalif [18], Sacer & Oluic [17], Quintero, Mora, & Albegro [30], and Susanto [19] which concludes the importance of the role of information technology on the quality of accounting information systems.

5 Conclusion

Based on the results of the research and discussion above it can be concluded that information technology influences the quality of the accounting information system. Not yet the quality of accounting information systems at accredited private universities in Java which is characterized by accounting information systems that are not flexible, not integrated and not reliable due to the inadequate use of the required information technology.

The results of this study are able to answer the research problem described through phenomena. The use of information technology with the right characteristics can minimize the problem of not yet quality accounting information systems. A limitation of this study is the number of samples used and this study focuses on private universities, not in combination with public universities. Information system quality research can also be grouped by region and other status, owner groups, and others

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